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**GROUP 1700**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/791,996  
Filing Date: March 03, 2004  
Appellant(s): FLOSBACH ET AL.

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Rakesh H. Mehta  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed December 27, 2007 appealing from the Office action mailed February 13, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. However, note for clarity that Appellants' first and second grounds of rejection are actually the Examiner's first ground of 102/103 rejection; and Appellants' third ground of rejection is actually the Examiner's second ground of rejection.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

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|           |                   |         |
|-----------|-------------------|---------|
| 4,880,890 | MIYABAYASHI ET AL | 11-1989 |
| 5,397,638 | MIKI ET AL        | 3-1995  |
| 5,023,141 | WILLEY            | 6-1991  |

### (9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The Examiner Note: the presence of claimed 0-20 wt % of *diols* and claimed 0-20 wt % of *monocarboxylic acids* in the polyester polyol of (a) was interpreted by the Examiner as being **optional** since: (i) Example 1 of the Applicants' specification shows that polyester polyol is made either without diols and monocarboxylic acids or with diols and monocarboxylic acids with no indication of specific amounts, i.e. Example 1 shows that diols and monocarboxylic acids are merely *optional*; (ii) there are **no** other examples in the Applicants' specification showing *any* amount of diols and monocarboxylic acids or required "sufficient specificity" of claimed ranges of diols and monocarboxylic acids. In other words, the Applicants' specification shows that diols and monocarboxylic acids are *optional*, and it does not show required "sufficient specificity" of claimed ranges of diols and monocarboxylic acids.

Claims 11, 12, 16, 18-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Duecoffre et al (US 6,063,448).

Duecoffre et al disclose a process comprising applying a multi-layer coating (See column 11, lines 43-45) wherein the substrate is an automobile and parts thereof (See column 1, lines 7-12; column 11, lines 46-49) having base lacquer which contains pigments such as effect pigments (claimed special effect-imparting base coat) (See column 11, lines 31-35), and a coating agent applied thereon (See column 11, lines 31-34) as a transparent clear coat (See column 10, lines 57-61) and curing said coating (See column 10, lines 61-63). The coating agent contains resin solids **consist of** B) 90 to 10% by weight of one or more hydroxy-functional polyesters (*claimed*

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*component a*); A) 10 to 90% by weight of one or more hydroxy-functional (meth)acrylic copolymers and C) 0 to 40% by weight of one or more hydroxy-functional binder vehicles different from A) and B) (A and C being *claimed component b*); D) 5 to 50% by weight of one or more blocked polyisocyanates (See column 7, lines 37-67) and E) 5 to 40% by weight of one or more components based on triazine which crosslink with the hydroxyl groups of components A), B) (D and E being *claimed component c*); wherein the sum of components A) to E) adds up to 100% (See column 14, lines 1-33). Duecoffre et al further teach that at least 50% by weight of the (meth)acrylic copolymers, with respect to the total amount of component A), has been produced in the presence of one or more of the *hydroxy-functional polyesters* corresponding to at least **20%** by weight of the total amount of component B) (See column 1, lines 62-67). During the preparation of the binder at least 50% by weight, preferably more than 70% by weight, of the total amount of (meth)acrylic copolymer A), and most preferably the total amount thereof, is produced in the presence of at least **20%** by weight, preferably more than 30% by weight, most preferably more than **40%** by weight, of polyester resin B), wherein the last-mentioned percentages by weight are quoted with respect to the total amount of component B) (See column 2, lines 22-32) or at least *partial* amounts of polyester B) (See column 3, lines 25-28). Moreover, Duecoffre et al expressly teach in Example 5 that a binder system is prepared by mixing 32 parts of 62.6 % solution of a component A) (20 parts of solids) prepared by copolymerizing acrylic copolymer with hydroxy-functional polyester, and 17 parts of 70% solution of separate hydroxy-functional polyester B) (12 parts of solids). The polyester resins B) preferably have number average molecular weights of 200 to 5000, most preferably 1000 to 3000, an OH number of 30 to 450 mg KOH/g, most preferably from 120 to 280 mg KOH/g, and an acid number of 0 to 60 mg KOH/g, most preferably from 2 to 35 mg KOH/g (See column 5, lines 55-60). The polyester resins B) may be prepared

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using 10 to 70% by weight of a mixture of polycarboxylic acids including fumaric acids (See column 6, line 25) and dimeric fatty acids (See column 6, line 26), 0 to 60% by weight of *monocarboxylic acids diols* (i.e. the presence of monocarboxylic acids is optional), and 5 to 40% by weight of tri- and/or polyhydric alcohols such as glycerol, trimethylolpropane, pentaerythritol, dipentaerythritol (See column 6, lines 32-37), 0 to 40% by weight of *diols* (i.e. the presence of diols is optional), 0 to 15% by weight of hydroxycarboxylic acids (See column 14, lines 40-65). The coating composition may exist as organic solvent based composition (See examples 1-5) or in a water-thinnable form (See column 10, lines 10-11).

It is the Examiner's position that Duecoffre et al anticipate claimed invention because Examples of Applicants' disclosure show no more than diols and monocarboxylic acids being *optional* (See Example 1); and there are no other examples in the Applicants' disclosure showing *any* amounts of diols and monocarboxylic acids, i.e. the Applicants' disclosure does not show required "sufficient specificity" of claimed ranges.

As to the claimed range of 0-20 wt % of diols and claimed range of 0-20 wt % of monocarboxylic acids, if it could be argued that Duecoffre et al do not anticipate claimed 0-20 wt % of diols and claimed 0-20 wt % of monocarboxylic acids, it is the Examiner's position that claimed ranges would be *obvious* over Duecoffre et al because Applicants' disclosure does not provide *any evidence of unexpected results within claimed narrow range*. It is held that concentration limitations are obvious absent a showing of criticality. *Akzo v. E.I. du Pont de Nemours* 1 USPQ 2d 1704 (Fed. Cir. 1987).

It is well settled that when the prior art discloses a range which touches \*>or< overlaps the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the

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claims are directed to a narrow range, >and< the reference teaches a broad range, \*\* depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with “sufficient specificity” to constitute an anticipation of the claims. \*\*>See, e.g., *Atofina v. Great Lakes Chem. Corp.*, 441 F.3d 991, 999, 78 USPQ2d 1417, 1423 (Fed. Cir. 2006) wherein the court held that a reference temperature range of 100-500 degrees C did not describe the claimed range of 330-450 degrees C with sufficient specificity to be anticipatory. Further, while there was a slight overlap between the reference’s preferred range (150-350 degrees C) and the claimed range, that overlap was not sufficient for anticipation. “[T]he disclosure of a range is no more a disclosure of the end points of the range than it is each of the intermediate points.” *Id.* at 1000, 78 USPQ2d at 1424. Any evidence of unexpected results within the narrow range< may also render the claims unobvious. The question of “sufficient specificity” is similar to that of “clearly envisaging” a species from a generic teaching. See MPEP § 2131.02. A 35 U.S.C. 102 /103 combination rejection is permitted if it is unclear if the reference teaches the range with “sufficient specificity.” The examiner must, in this case, provide reasons for anticipation as well as a motivational statement regarding obviousness. *Ex parte Lee*, 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board). See MPEP § 2131.03 [R-5].

As to claimed concentrations of other components, if it could be argued that Duecoffre et al do not show claimed ranges of other components, it is the Examiner’s position that claimed ranges of all components would be *obvious* over Duecoffre et al because Applicants’ disclosure does not provide *any evidence of unexpected results within claimed ranges*.

Claims 11, 12, 16, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyabayashi et al (US 4,880,890) in view of Miki et al (US 5397638).

Miyabayashi et al disclose a process for forming a coating layer on a substrate (See column 7, line 14) such as steel, aluminum (See column 6, lines 55-57) comprising applying a coating composition to a substrate (See column 6, lines 60-62), and curing the coated layer, thereby forming two layer coating. The coating composition can be used as *clear* (transparent) coating (See column 6, lines 25-26) or it may be supplemented with **coloring pigments** (See column 6, line 35). The coating composition comprises aliphatic (non-aromatic) polyester polyol and blocked polyisocyanate (See column 2, lines 14-29) in claimed amounts (See Example 8 and

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Tables 1, 3). The aliphatic polyester polyol can be prepared by reacting aliphatic dicarboxylic acid that including dimer acid (See column 4, line 57), aliphatic polyol having at least three functional groups (See column 5, lines 14-19). The examples include polyester polyol prepared with a hydroxyl component comprising a polyol having at least three functional groups in amounts as high as about 75% (See Example 12). The polyester polyol can be prepared from TMP (trimethylol propane) and aliphatic dicarboxylic acid and has an acid value of 3.8, hydroxy value of 446.1, number average molecular weight of 623 and a hydroxyl functionality of 5 (See Example 8). The coating composition may be based on organic solvents (See column 6, lines 28-29). Miyabayashi et al further teach that the metal substrates can be optionally fabricated into parts after applying a the polyester polyol coating (See column 1, lines 11-15) due to flexibility of the coating and its strong adhesion to the substrates ion them into parts (See column 1, lines 11-12). Miyabayashi et al further disclose that a thermosetting resin composition may be used for preparing precoated metals (See column 6, lines 47-50) by applying the resin composition to a metal substrate such as alloyed zinc-plated steel (See column 6, lines 54) after conventional chromating pre-treatment (See column 6, lines 59) and pre-coating it with a primer (See column 6, lines 62-63) such as a conventional polyester primer (claimed base coat) (See column 7, lines 3-4). The film obtained by curing the thermosetting resin composition is completely free of yellowing and thermal degradation. The film also exhibits increased hardness as well as high flexibility, stain resistance and chemical resistance and can be utilized for, among others, electrical appliances (See column 7, lines 22-31).

Miyabayashi et al fail to teach that: (i) the method is suitable for treating automotive body (Claim 11); (ii) the coating resin composition can be applied over a colored base coat to form a multi-layer coating (Claim 11).



As to (i), Miki et al teach that increasing requirements for more corrosion resistance than before in automotive bodies and household electric appliances are met by coating zinc alloy-plated steel sheets with a chromate layer and resin film (See column 1, lines 10-29). In other words, Miki et al is a secondary reference, which is relied upon to show that a method suitable for treating household electric appliances is also suitable for treating automotive bodies.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the method of Miyabayashi et al for treating automotive bodies with the expectation of providing the desired high flexibility, stain resistance and chemical resistance because Miki et al is a secondary reference, which is relied upon to show that a method suitable for treating household electric appliances is also suitable for treating automotive bodies.

As to (ii), a) it is well known in the art that a colored polyester primer (base coat) can be primarily used in the manufacture of automobiles for coating metal or plastic substrates to cover imperfections in surfaces and provides the surface to which conventional topcoats will adhere.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a colored polyester primer (claimed base coat) that is primarily used in the manufacture of automobiles as a polyester primer of the cited prior art before applying a polyester topcoat with the expectation of covering imperfections in surfaces and providing the surface to which the polyester topcoat will adhere since Miyabayashi et al teach that any polyester primer can be used for coating pre-treated metal substrates.

b) it would have been also obvious to one of ordinary skill in the art at the time the invention was made to have used a polyester polyol of Miyabayashi et al that has coloring pigments (claimed colored base coat) as a polyester primer in the cited prior art before applying a clear polyester polyol as a top coat with the expectation of providing the desired color, high

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flexibility, stain resistance and chemical resistance since Miyabayashi et al teach that polyester polyol provides high flexibility, stain resistance and chemical resistance, and Miyabayashi et al teach that any polyester primer can be used for coating pre-treated metal substrates.

c) Miyabayashi et al further teach that the volume of the resin composition to be applied is not limitative (See column 7, lines 7-11). It is a well-known principle to reapply a coating composition to achieve a desired thickness of a final coating, depending on intended use of the final coated product. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have reapplied a coating composition of Miyabayashi et al according to a well-known principle, with the expectation of providing the desired thickness of a final coating depending on intended use of the final coated product, in the absence of a showing of criticality.

It would have also been obvious to one of ordinary skill in the art at the time the invention was made to have applied a polyester polyol of Miyabayashi et al having coloring pigments (claimed colored base coat) then a clear coating with the expectation of providing the desired color to the coated substrate depending on particular use of a final product.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wiley (US 5,023,141) teaches that high solids colored polyester primer (base coat) can be *primarily* used in the manufacture of automobiles (See column 1, lines 7-8) for coating steel, aluminum or plastic substrates (See column 1, lines 48-58) to cover imperfections in surfaces (See column 1, lines 59-62) and provides the surface to which conventional topcoats will adhere (See column 1, lines 57-58).

#### **(10) Response to Argument**

Applicants' arguments filed December 27, 2007 have been fully considered but they are not persuasive.

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(A) Rejection of claims 11, 12, 16, 18-21 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Duecoffre et al (US 6,063,448).

(i) Applicants argue that a hydroxyl-functional binder of Duecoffre is based on a hybrid polymer system of (meth)acrylic copolymer and a hydroxy-functional polyester that is created as a result of the (meth)acrylic copolymer being prepared in the presence of the hydroxy-functional polyester. In fact, that the methacrylic copolymer is prepared in the presence of the hydroxy-functional polyester is the main point of the Duecoffre invention (see for example, Duecoffre: Abstract; Col. 1, lines 61-66; Col. 2, lines 23-31; Col. 2, lines 39-47; Col. 3, lines 25-28; Col. 11 and 12, Examples 1 and 3; Claim 1 and Claim 2). The hybrid polymers used in Duecoffre are different from a simple physical mixture of a methacrylic copolymer and polyester polyol, as seen in the present invention. The Examiner suggests that the polyester described in Duecoffre is similar to the polyester polyol (a) of the present invention. However, Duecoffre's clear coat does not contain a polyester polyol, but instead contains a hybrid binder comprising polyester polyol as one part, and the methacrylic acid as the second part. The Examiner alleges that Claims 11 and 12 of the present application do not recite a negative limitation about a hybrid binder, i.e., a limitation precluding the hybrid binder. However, as described above, the "hybrid binder" is an entirely different component, both from a physical standpoint and chemical standpoint. In its non-processed form, i.e., before the process for making the hybrid binder was initiated, the two compounds, methacrylic monomers and the hydroxy-functional binder, individually may form a precursor to binder system similar to the binder system of the present invention. However, in its final form, the hybrid binder system is completely different.

The Examiner respectfully disagrees with this argument. As was discussed above, Duecoffre expressly teaches that a binder system comprises separate hydroxy-functional polyester

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in an amount of 80 % or 60 % by weight of the total amount of component B). Moreover, Duecoffre et al expressly teach in Example 5 that a binder system of the clear coat is a simple physical mixture prepared by *mixing* 32 parts of 62.6 % (20 parts of solids) solution of a hybrid binder A of Example 3 prepared by copolymerizing acrylic copolymer with hydroxy-functional polyester, and 17 parts of 70% (12 parts of solids) solution of separate hydroxy-functional polyester B) of Example 1. In the Example 6 Duecoffre et al describes a simple physical mixture of a hybrid binder A of Example 4 and polyester polyol B of Example 1. Therefore, in contrast to Applicants argument, Duecoffre's clear coat does contain a polyester polyol *in addition* to a hybrid binder of polyester polyol and the methacrylic acid. Moreover, **claims 11 and 12 do not recite negative limitation about a hybrid binder**, i.e. the hybrid binder is not excluded from the composition of claims 11 and 12.

(ii) Applicants argue that Duecoffre does not teach the claimed quantitative composition of components (a1) and (a2) of the present invention, which require that the hydroxyl components and carboxyl components comprise no more than 20 wt-% of at least one diol and at least one monocarboxylic acid, respectively. To the contrary, Example 1 of Duecoffre comprises 57.8 M-% of monocarboxylic acid (isononanoic acid) among the carboxyl components and Example 2 of Duecoffre comprises 57 wt- % diol (hexane diol) among the hydroxyl components. In these Examples, both values (the 57.8 wt-to and 57 wt-%) are far above the upper limit disclosed in the present invention, which is 20 M-% in either case. This upper limit is set at 20 wt-% to ensure the high level of hydroxyl-functionality of the final polyester of the present invention.

The Examiner respectfully disagrees with this argument. As was discussed above, it is the Examiner's position that Duecoffre et al anticipate claimed invention because Examples of Applicants' disclosure show no more than diols and monocarboxylic acids being *optional* (See

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Example 1); and there are no other examples in the Applicants' disclosure showing *any* amounts of diols and monocarboxylic acids, i.e. the Applicants' disclosure does not show required "sufficient specificity" of claimed ranges.

**As to the claimed range of 0-20 wt % of diols and claimed range of 0-20 wt % of monocarboxylic acids**, if it could be argued that Duecoffre et al do not anticipate claimed 0-20 wt % of diols and claimed 0-20 wt % of monocarboxylic acids, it is the Examiner's position that claimed ranges would be *obvious* over Duecoffre et al because Applicants' disclosure does not provide *any evidence of unexpected results within claimed narrow range*. It is held that concentration limitations are obvious absent a showing of criticality. *Akzo v. E.I. du Pont de Nemours* 1 USPQ 2d 1704 (Fed. Cir. 1987).

**(B) Rejection of claims 11, 12, 16, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyabayashi et al (US 4,880,890) in view of Miki et al (US 5397638).**

(i) Applicants submit that a prima facie case of obviousness is not established. The first prong of the obviousness inquiry is not satisfied here. The polyester polyol (a) of the present system is non-aromatic. On the other hand, Miyabayashi allows for aromatic material, e.g. Col. 4, line 52-65 comprises a number of aromatic dicarboxylic acids, the paragraph connecting col. 4 and col. 5 comprises aromatic diols. Furthermore, the Miyabayashi reference is directed to polyester binders that are useful binders in coating compositions suitable for metal precoating. There is no

The argument is unconvincing because Miyabayashi et al teach aliphatic dicarboxylic acids (See column 4, line 57 and Example 8) and aliphatic polyols (See column 5, lines 14-19 and Example 8).

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(ii) Applicants submit that a prima facie case of obviousness is not established because the second prong of the obviousness inquiry is not satisfied: there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings is not satisfied (See *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002)). Specifically, neither Miyabayashi, nor Miki, express any suggestion or motivation to combine the two references to arrive at the claims of the present invention in question.

The Examiner respectfully disagrees with this argument. Miyabayashi et al teach that a thermosetting resin composition may be used for preparing precoated metals (See column 6, lines 47-50) by applying the resin composition to a metal substrate such as alloyed zinc-plated steel (See column 6, lines 54) after conventional chromating pre-treatment (See column 6, lines 59). The film also exhibits increased hardness as well as high flexibility, stain resistance and chemical resistance and can be utilized for, among others, electrical appliances (See column 7, lines 22-31). Miki et al teach that increasing requirements for more corrosion resistance than before in automotive bodies and household electric appliances are met by coating zinc alloy-plated steel sheets with a chromate layer and resin film (See column 1, lines 10-29). In other words, Miki et al is a secondary reference, which is relied upon to show that a method suitable for treating household electric appliances is also suitable for treating automotive bodies.

Thus, one of ordinary skill in the art would have been motivated and would have a reasonable expectation of success to apply a method of Miyabayashi et al suitable for household electric appliances for automotive bodies because Miki teaches that a method suitable for household electric appliances comprising steps of coating zinc alloy-plated steel sheets with a chromate layer and resin film is also suitable for automotive bodies.

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As to (iii), Applicants also submit a prima facie case of obviousness is further not established because the third prong of the obviousness inquiry is not satisfied. There is no likelihood or an expectation of success from such a combination. Even if such a combination is made, this would not result in an automotive body base coat/clear coat top-coating process, as claimed by the present invention because neither of the references mentions or suggests base coat/clear coat top-coating process. The Examiner points at Miki, Col. 1, lines 10-29. However, this citation relates to electrocoatable resin-coated steel sheets, which are typical primer coatings for bare metal, and not base coat/clear coat systems. Therefore, there is no reasonable expectation of success from such a combination.

The Examiner respectfully disagrees with this argument. As was discussed above, Miyabayashi et al teach that a coating composition may be used to form a colored coating or clear coating layer. Miyabayashi et al further teach that the volume of the resin composition to be applied is not limitative (See column 7, lines 7-11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have reapplied a coating composition of Miyabayashi et al according to a well-known principle, with the expectation of providing the desired thickness of a final coating depending on intended use of the final coated product, in the absence of a showing of criticality. It would have also been obvious to one of ordinary skill in the art at the time the invention was made to have applied a coating composition of Miyabayashi et al having coloring pigments (claimed base coat) then a clear coating with the expectation of providing the desired color to the coated substrate depending on particular use of a final product.

As to a reasonable expectation of success in using coating composition of Miyabayashi et al suitable for household electric appliances for automotive bodies, as was discussed above, Miyabayashi et al teach that a thermosetting resin composition may be used for preparing

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precoated metals (See column 6, lines 47-50) by applying the **resin** composition to a metal substrate such as **alloyed zinc-plated steel** (See column 6, lines 54) after conventional **chromating** pre-treatment (See column 6, lines 59). The film also exhibits increased hardness as well as high flexibility, stain resistance and chemical resistance and can be utilized for, among others, *electrical appliances* (See column 7, lines 22-31). **Miki** et al teach that increasing requirements for more corrosion resistance than before in automotive bodies and *household electric appliances* are met by coating **zinc alloy-plated steel** sheets with a **chromate layer** and **resin** film (See column 1, lines 10-29). In other words, Miki et al is a secondary reference, which is relied upon to show that a method suitable for treating household electric appliances is also suitable for treating automotive bodies.

Thus, one of ordinary skill in the art would have been motivated and would have a reasonable expectation of success to apply a method of Miyabayashi et al suitable for household electric appliances for automotive bodies because Miyabayashi et al teach that a thermosetting resin composition may be used for preparing precoated metals by applying the resin composition to a metal substrate such as alloyed zinc-plated steel after conventional chromating pre-treatment and Miki teaches that a method suitable for household electric appliances comprising steps of coating zinc alloy-plated steel sheets with a chromate layer and resin film is also suitable for automotive bodies.

#### (11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.



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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Elena Tsoy  
Primary Examiner  
Art Unit 1762  
March 19, 2007

ELENA TSOY  
PRIMARY EXAMINER

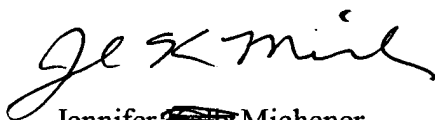


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